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10/728,035	12/03/2003	Rashid A. Attar	020524	9426

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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/728,035	ATTAR ET AL.	
	Examiner	Art Unit	
	Marisol Figueroa	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 May 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16 and 18-46* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16 and 18-46* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Claims 1-16 and 18-46 are currently pending in the present application.

2. Applicant's arguments with respect to claims 1-16 and 18-46 have been considered but are moot in view of the new ground(s) of rejection.

Declaration

3. The Declaration filed on 05/30/2008 under 37 CFR 1.131 (see pages 18-19 of Applicant's arguments) is ineffective to overcome the Lee reference (filing date July 25,2003) since there was no evidence attached to the declaration to show diligence and conception of the invention prior to the filing date of the Lee reference.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. **Claims 1, 11, 13, 14, 21, 29, 31, 33, 39, 40, 43, and 44** are rejected under 35 U.S.C. 103(a) as being unpatentable over CHOI et al. (US 6,405,045) in view of LEE (US 2004/0165529).

Regarding claims 1, 39, and 40, Choi discloses an apparatus (method and computer product) for communications, comprising:

means for communicating, from a base station, with a plurality of communication devices, the communications placing a load on the base station (col. 1, lines 22-25, 38-43; col. 2,

lines 1-5; the base transceiver station BTS include means to transmit/receive information to/from mobile stations, thus placing a load in the BTS);

means for monitoring a plurality of parameters each relating to the load on the base station (Fig. 2; col. 3, lines 20-36; col. 3, line 59-col. 4, lines 1-21; the BTS includes a dynamic overload control device that monitors a base control processor (BCP) activity, BTS call resource occupancy rate, central control processor (CCP) activity, etc. (i.e., plurality of parameters/ value Y1));

means for detecting an overload as a result of one of the parameters crossing a threshold (col. 3, lines 59-64; col. 4, lines 15-67; the overload detect unit stores different threshold points that indicate different overload types, and when the overload control process is started compares the detected parameters (i.e., value Y1) with the thresholds and detects the overload when the parameters exceeds the thresholds, see Fig. 3); and

means for implementing a plurality of control mechanisms to reduce the load on the base station, wherein the control mechanism used to reduce the load on the base station is selected based on a plurality of types and of the overload on the base station; and wherein each type is associated with at least one of the parameters (col. 4, line 22-col.5, lines 1-12; the overload process unit can detect the overload in the handoff request call point, at the incoming or out-going call request points (i.e., overload types), in response when the process unit detects the overload in the handoff request call it rejects the allocation for all call requests, if the overload process unit detects an incoming and outgoing call overload, the incoming or out-going call is rejected, etc. (i.e., plurality of control mechanisms to reduce load)).

But, Choi does not particularly disclose selecting a control mechanism to reduce the load on the base station based on a degree of the overload.

However, Lee teaches selecting a control mechanism to reduce the load on the base station based on a degree of the overload (Lee teaches an overload control method that includes judging whether an access network (i.e., base station) is overloaded and restricting an originating call and a termination call (i.e., plurality of control mechanisms) according to a degree of the overload so that the overload control method can effectively cope with the overload situation (see abstract; p.0033-0036). The overload control processes periodically checks whether the access network is overloaded, and when is indeed overloaded, a call (i.e., terminating call or originating call) is discriminately restricted according to a degree of overload (p.0051-0056; Fig. 6)). Therefore, it would have been obvious to a person having ordinary skill in the at the time of the invention, to modify Choi to include selecting a control mechanism to reduce the load on the base station based on a degree of the overload, as suggested by Lee, since such a modification would allow the system to discriminately perform an overload control according to a degree of the overload so that the overload control method can effectively cope with the overload situation, and to effectively manage the resources at the base station (abstract; p.0033-0034 and p.0083).

Regarding claim 13, the combination of Choi and Lee disclose the apparatus of claim 1, in addition Choi discloses wherein one of the parameters comprises loading on processing resources used for communication with the communication devices (col. 3, lines 20-36; col. 4, lines 15-20; the systems periodically monitors the base control processor BCP activity and the central control processor CCP activity ratio).

Regarding claim 14, the combination of Choi and Lee disclose the apparatus of claim 1, in addition Choi discloses wherein one of the parameters comprises receiver stability at the base station, base station transmission power requirements derived from feedback from communication devices, or loading on processing resources used for communication with the communication devices (col. 3, lines 20-36; col. 4, lines 15-20; the systems periodically monitors the BTS call occupancy rate).

Regarding claim 11, Choi discloses an apparatus for communications, comprising:

means for communicating, from a base station, with a plurality of communication devices, the communications placing a load on the base station (col. 1, lines 22-25, 38-43; col. 2, lines 1-5; the base transceiver station BTS include means to transmit/receive information to/from mobile stations, thus placing a load in the BTS);

means for monitoring a plurality of parameters each relating to the load on the base station (Fig. 2; col. 3, lines 20-36; col. 3, line 59-col. 4, lines 1-21; the BTS includes a dynamic overload control device that monitors a base control processor (BCP) activity, BTS call resource occupancy rate, central control processor (CCP) activity, etc. (i.e., plurality of parameters/ value Y1));

means for detecting an overload as a result of one of the parameters crossing a threshold; means for detecting a second type of overload as a result of a second one of the parameters crossing a second threshold (Fig. 3; col. 3, lines 59-64; col. 4, lines 15-67; the overload detect unit stores different threshold points that indicate different overload types, and when the overload control process is started compares the detected parameters (i.e., value Y1) with the thresholds and detects the overload when the parameters exceeds the thresholds, for example, the

system detects handoff call overload (i.e., first type) when the value Y1 exceeds the handoff call rejection point (i.e., first threshold) and the system detects an incoming and outgoing call overload (i.e., second type) when the value Y1 exceeds the incoming and outgoing call rejection point (i.e., second threshold)); and

means for implementing a plurality of control mechanisms to reduce the load on the base station, wherein the control mechanism used to reduce the load on the base station is selected based on a plurality of types and of the overload on the base station; and wherein each type is associated with at least one of the parameters (col. 4, line 22-col.5, lines 1-12; the overload process unit can detect the overload in the handoff request call point, at the incoming or out-going call request points (i.e., overload types), in response when the process unit detects the overload in the handoff request call it rejects the allocation for all call requests, if the overload process unit detects an incoming and outgoing call overload, the incoming or out-going call is rejected, etc. (i.e., plurality of control mechanisms to reduce load)).

But, Choi does not particularly disclose selecting a control mechanism to reduce the load on the base station based on a degree of the overload.

However, Lee teaches selecting a control mechanism to reduce the load on the base station based on a degree of the overload (Lee teaches an overload control method that includes judging whether an access network (i.e., base station) is overloaded and restricting an originating call and a termination call (i.e., plurality of control mechanisms) according to a degree of the overload so that the overload control method can effectively cope with the overload situation (see abstract; p.0033-0036). The overload control processes periodically checks whether the access network is overloaded, and when is indeed overloaded, a call (i.e., terminating call or

originating call) is discriminately restricted according to a degree of overload (p.0051-0056; Fig. 6)). Therefore, it would have been obvious to a person having ordinary skill in the at the time of the invention, to modify Choi to include selecting a control mechanism to reduce the load on the base station based on a degree of the overload, as suggested by Lee, since such a modification would allow the system to discriminately perform an overload control according to a degree of the overload so that the overload control method can effectively cope with the overload situation, and to effectively manage the resources at the base station (abstract; p.0033-0034 and p.0083).

Regarding claim 21, Choi discloses a base station configured to support communications with a plurality of communication devices, the communications placing a load on the base station (col. 1, lines 22-25, 38-43; col. 2, lines 1-5; the base transceiver station BTS include means to transmit/receive information to/from mobile stations, thus placing a load in the BTS), the base station comprising:

a processor (col. 3, lines 20-36; i.e., overload control device) configured to monitor a plurality of parameters each relating to the load on the base station (Fig. 2; col. 3, lines 20-36; col. 3, line 59-col. 4, lines 1-21; the overload control device that monitors a base control processor (BCP) activity, BTS call resource occupancy rate, central control processor (CCP) activity, etc. (i.e., plurality of parameters/ value Y1)), and to detect an overload as a result of one of the parameters crossing a threshold (Fig. 3; col. 3, lines 59-64; col. 4, lines 15-67; the overload detect unit stores different threshold points that indicate different overload types, and when the overload control process is started compares the detected parameters (i.e., value Y1) with the thresholds and detects the overload when the parameters exceeds the threshold), and to reduce the load on the base station using a plurality of control mechanisms based on a plurality

of types of the overload on the base station; and wherein each type is associated with at least one of the parameters (col. 4, line 22-col.5, lines 1-12; the overload process unit can detect the overload in the handoff request call point, at the incoming or out-going call request points (i.e., overload types), in response when the process unit detects the overload in the handoff request call it rejects the allocation for all call requests, if the overload process unit detects an incoming and outgoing call overload, the incoming or out-going call is rejected, etc. (i.e., plurality of control mechanisms to reduce load)).

But, Choi does not particularly disclose using a control mechanism to reduce the load on the base station based on a degree of the overload.

However, Lee teaches using a control mechanism to reduce the load on the base station based on a degree of the overload (Lee teaches an overload control method that includes judging whether an access network (i.e., base station) is overloaded and restricting an originating call and a termination call (i.e., plurality of control mechanisms) according to a degree of the overload so that the overload control method can effectively cope with the overload situation (see abstract; p.0033-0036). The overload control processes periodically checks whether the access network is overloaded, and when is indeed overloaded, a call (i.e., terminating call or originating call) is discriminately restricted according to a degree of overload (p.0051-0056; Fig. 6)). Therefore, it would have been obvious to a person having ordinary skill in the at the time of the invention, to modify Choi to include using a control mechanism to reduce the load on the base station based on a degree of the overload, as suggested by Lee, since such a modification would allow the system to discriminately perform an overload control according to a degree of the overload so

that the overload control method can effectively cope with the overload situation, and to effectively manage the resources at the base station (abstract; p.0033-0034 and p.0083).

Regarding claim 29, Choi discloses a base station configured to support communications with a plurality of communication devices, the communications placing a load on the base station (col. 1, lines 22-25, 38-43; col. 2, lines 1-5; the base transceiver station BTS include means to transmit/receive information to/from mobile stations, thus placing a load in the BTS), the base station comprising:

a processor (col. 3, lines 20-36; i.e., overload control device) configured to monitor a plurality of parameters each relating to the load on the base station (Fig. 2; col. 3, lines 20-36; col. 3, line 59-col. 4, lines 1-21; the overload control device that monitors a base control processor (BCP) activity, BTS call resource occupancy rate, central control processor (CCP) activity, etc. (i.e., plurality of parameters/ value Y1)), and to detect an overload as a result of one of the parameters crossing a threshold, wherein the processor is further configured to detect a second type overload as a result of a second one of the parameters crossing a second threshold (Fig. 3; col. 3, lines 59-64; col. 4, lines 15-67; the overload detect unit stores different threshold points that indicate different overload types, and when the overload control process is started compares the detected parameters (i.e., value Y1) with the thresholds and detects the overload when the parameters exceeds the threshold, for example, the system detects handoff call overload (i.e., first type) when the value Y1 exceeds the handoff call rejection point (i.e., first threshold) and the system detects an incoming and outgoing call overload (i.e., second type) when the value Y1 exceeds the incoming and outgoing call rejection point (i.e., second threshold)), and to reduce the load on the base station using a plurality of control mechanisms

based on a plurality of types of the overload on the base station; and wherein each type is associated with at least one of the parameters (col. 4, line 22-col.5, lines 1-12; the overload process unit can detect the overload in the handoff request call point, at the incoming or out-going call request points (i.e., overload types), in response when the process unit detects the overload in the handoff request call it rejects the allocation for all call requests, if the overload process unit detects an incoming and outgoing call overload, the incoming or out-going call is rejected, etc. (i.e., plurality of control mechanisms to reduce load)).

But, Choi does not particularly disclose using a control mechanism to reduce the load on the base station based on a degree of the overload.

However, Lee teaches using a control mechanism to reduce the load on the base station based on a degree of the overload (Lee teaches an overload control method that includes judging whether an access network (i.e., base station) is overloaded and restricting an originating call and a termination call (i.e., plurality of control mechanisms) according to a degree of the overload so that the overload control method can effectively cope with the overload situation (see abstract; p.0033-0036). The overload control processes periodically checks whether the access network is overloaded, and when is indeed overloaded, a call (i.e., terminating call or originating call) is discriminately restricted according to a degree of overload (p.0051-0056; Fig. 6)). Therefore, it would have been obvious to a person having ordinary skill in the at the time of the invention, to modify Choi to include using a control mechanism to reduce the load on the base station based on a degree of the overload, as suggested by Lee, since such a modification would allow the system to discriminately perform an overload control according to a degree of the overload so

that the overload control method can effectively cope with the overload situation, and to effectively manage the resources at the base station (abstract; p.0033-0034 and p.0083).

Regarding claim 31, the combination of Choi and Lee disclose the base station of claim 21, in addition Choi discloses wherein the processor is further configured to support communications with the communication devices, and wherein one of the parameters is a function of loading on the processor (col. 3, lines 20-36; col. 4, lines 15-20; the system periodically monitors the base control processor BCP activity and the central control processor CCP activity ratio).

Regarding claim 33, the combination of Choi and Lee disclose the base station of claim 21, in addition Choi discloses further comprising a receiver and transmitter, and wherein the processor is further configured to support communications with the communication devices (col. 1, lines 22-25, 38-43; col. 2, lines 1-5; the base transceiver station BTS include means to transmit/receive information to/from mobile stations (i.e., transmitter/recever)), and wherein one of the parameters is a function of receiver stability, transmission power requirements for the transmitter, or loading on the processor (col. 3, lines 20-36; col. 4, lines 15-20; the system periodically monitors the base control processor BCP activity and the central control processor CCP activity ratio (i.e., loading in the processor)).

Regarding claims 43-44, the combination of Choi and Lee disclose the apparatus (and base station) of claims 1 and 21, in addition Lee discloses wherein means for detecting an overload as a result of one of the parameters crossing a threshold is for an entire period of time (paragraphs [0054]-[0056]; Lee teaches a control process that determines an overload condition by for example measuring a processor occupancy rate (i.e., parameter) and if the measured

processor occupancy rate is maintained for a prescribed time above a reference value (i.e., crossing the threshold for an entire period of time), the control process judges that an access network is in an overload state). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention, to modify Choi to include the features of detecting overload as a result of one of the parameters crossing the threshold for an entire period of time, as suggested by Lee, in order to assure that the system is in fact overloaded and avoid premature actions for relieving the overload condition when the system is not really overloaded.

6. **Claim 19** is rejected under 35 U.S.C. 103(a) as being unpatentable over CHOI et al. in views of LEE, BENDER (US 2002/0155852 A1), and KIM et al. (US 6,456,850 B1).

Regarding claim 19, Choi discloses an apparatus (method and computer product) for communications, comprising:

means for communicating, from a base station, with a plurality of communication devices, the communications placing a load on the base station (col. 1, lines 22-25, 38-43; col. 2, lines 1-5; the base transceiver station BTS include means to transmit/receive information to/from mobile stations, thus placing a load in the BTS);

means for monitoring a plurality of parameters each relating to the load on the base station (Fig. 2; col. 3, lines 20-36; col. 3, line 59-col. 4, lines 1-21; the BTS includes a dynamic overload control device that monitors a base control processor (BCP) activity, BTS call resource occupancy rate, central control processor (CCP) activity, etc. (i.e., plurality of parameters/ value Y1));

means for detecting an overload as a result of one of the parameters crossing a threshold (col. 3, lines 59-64; col. 4, lines 15-67; the overload detect unit stores different threshold points

that indicate different overload types, and when the overload control process is started compares the detected parameters (i.e., value Y1) with the thresholds and detects the overload when the parameters exceeds the thresholds, see Fig. 3); and

means for implementing a plurality of control mechanisms to reduce the load on the base station, wherein the control mechanism used to reduce the load on the base station is selected based on a plurality of types and of the overload on the base station; and wherein each type is associated with at least one of the parameters (col. 4, line 22-col.5, lines 1-12; the overload process unit can detect the overload in the handoff request call point, at the incoming or out-going call request points (i.e., overload types), in response when the process unit detects the overload in the handoff request call it rejects the allocation for all call requests, if the overload process unit detects an incoming and outgoing call overload, the incoming or out-going call is rejected, etc. (i.e., plurality of control mechanisms to reduce load)).

But, Choi does not particularly disclose selecting a control mechanism to reduce the load on the base station based on a degree of the overload.

However, Lee teaches selecting a control mechanism to reduce the load on the base station based on a degree of the overload (Lee teaches an overload control method that includes judging whether an access network (i.e., base station) is overloaded and restricting an originating call and a termination call (i.e., plurality of control mechanisms) according to a degree of the overload so that the overload control method can effectively cope with the overload situation (see abstract; p.0033-0036). The overload control processes periodically checks whether the access network is overloaded, and when is indeed overloaded, a call (i.e., terminating call or originating call) is discriminately restricted according to a degree of overload (p.0051-0056; Fig.

6)). Therefore, it would have been obvious to a person having ordinary skill in the at the time of the invention, to modify Choi to include selecting a control mechanism to reduce the load on the base station based on a degree of the overload, as suggested by Lee, since such a modification would allow the system to discriminately perform an overload control according to a degree of the overload so that the overload control method can effectively cope with the overload situation, and to effectively manage the resources at the base station (abstract; p.0033-0034 and p.0083).

But, the combination of Choi and Lee does not particularly disclose the control mechanisms comprising: means for determining idle users; means for bumping service to idle users; means for determining high data users; and means for bumping service to high data users.

However, these overload control mechanisms are well known in the art and Bender and Kim are evidence of the fact. Bender teaches a method for supervising connections with wireless access terminals and releasing the access terminals when they become idle for a predetermined period of time (p.0036, lines 1-11); and Kim teaches a method for preventing overload conditions in a communication system that performs a call load analysis to each of the individual subscribers, and the individuals subscribers whose contributions to the average call load are deemed significant (i.e., high data) are identified and removed from the system (abstract; col.8, lines 13-34). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to modify the combination of Choi and Lee to include the overload control mechanisms comprising means for determining idle and high data users and means for bumping service to idle and high data users, as suggested by Bender and Kim, since such a modification will allow the system to maximize the RF resources for use and to alleviate an overload condition.

7. **Claims 6 and 23** are rejected under 35 U.S.C. 103(a) as being unpatentable over CHOI et al. in views of LEE, GANDHI et al. (US 6,944,449), and GEHI et al. (US 6,134,216).

Regarding claim 6, Choi discloses an apparatus (method and computer product) for communications, comprising:

means for communicating, from a base station, with a plurality of communication devices, the communications placing a load on the base station (col. 1, lines 22-25, 38-43; col. 2, lines 1-5; the base transceiver station BTS include means to transmit/receive information to/from mobile stations, thus placing a load in the BTS);

means for monitoring a plurality of parameters each relating to the load on the base station (Fig. 2; col. 3, lines 20-36; col. 3, line 59-col. 4, lines 1-21; the BTS includes a dynamic overload control device that monitors a base control processor (BCP) activity, BTS call resource occupancy rate, central control processor (CCP) activity, etc. (i.e., plurality of parameters/ value Y1));

means for detecting an overload as a result of one of the parameters crossing a threshold (col. 3, lines 59-64; col. 4, lines 15-67; the overload detect unit stores different threshold points that indicate different overload types, and when the overload control process is started compares the detected parameters (i.e., value Y1) with the thresholds and detects the overload when the parameters exceeds the thresholds, see Fig. 3); and

means for implementing a plurality of control mechanisms to reduce the load on the base station, wherein the control mechanism used to reduce the load on the base station is selected based on a plurality of types and of the overload on the base station; and wherein each type is associated with at least one of the parameters (col. 4, line 22-col.5, lines 1-12; the overload process unit can detect the overload in the handoff request call point, at the incoming or out-going call request points (i.e., overload types), in response when the process unit detects the overload in the handoff request call it rejects the allocation for all call requests, if the overload process unit detects an incoming and outgoing call overload, the incoming or out-going call is rejected, etc. (i.e., plurality of control mechanisms to reduce load)).

But, Choi does not particularly disclose selecting a control mechanism to reduce the load on the base station based on a degree of the overload.

However, Lee teaches selecting a control mechanism to reduce the load on the base station based on a degree of the overload (Lee teaches an overload control method that includes judging whether an access network (i.e., base station) is overloaded and restricting an originating call and a termination call (i.e., plurality of control mechanisms) according to a degree of the overload so that the overload control method can effectively cope with the overload situation (see abstract; p.0033-0036). The overload control processes periodically checks whether the access network is overloaded, and when is indeed overloaded, a call (i.e., terminating call or originating call) is discriminately restricted according to a degree of overload (p.0051-0056; Fig. 6)). Therefore, it would have been obvious to a person having ordinary skill in the at the time of the invention, to modify Choi to include selecting a control mechanism to reduce the load on the base station based on a degree of the overload, as suggested by Lee, since such a modification would allow the system to discriminately perform an overload control according to a degree of the overload so that the overload control method can effectively cope with the overload situation, and to effectively manage the resources at the base station (abstract; p.0033-0034 and p.0083).

But, the combination of Choi and Lee does not particularly disclose wherein one of the parameters is a function of receiver stability at the base station and wherein the overload is detected as a result of a receiver stability estimate exceeding a threshold.

However, Gandhi teaches a base station monitoring the receiver stability and wherein overload is detected as a result of the receiver stability estimate exceeding a threshold (col. 3, line 22-col. 5, lines 1-13; the base station monitors a first performance indicators that includes rise from interference rise over background thermal noise (i.e., receiver stability parameter) that is comparing with a blocking threshold that represents a control overload benchmark and if the

first performance indicator exceeds the blocking threshold, the base station rejects new call arrivals because the system is overloaded). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the combination to include wherein one of the parameters comprises receiver stability at the base station and wherein the overload is detected as a result of a receiver stability estimate exceeding a threshold, as suggested by Gandhi, since such a modification would allow the base station to facilitate meeting a desired level of signal quality or statistical reliability over a defined coverage area for the reverse link of currently active users.

But, the combination of Choi, Lee, and Gandhi does not particularly disclose detecting a first degree overload as a function of a measured parameter exceeding the threshold for a period of time and detecting a second degree overload as a function of a measured parameter exceeding the threshold for a second period of time longer than the first period of time.

However, Gehi teaches detecting a first degree overload as a function of a measured parameter exceeding the threshold for a period of time and detecting a second degree overload as a function of a measured parameter exceeding the threshold for a second period of time longer than the first period of time. (abstract; col. 2, lines 5-36; Gehi teaches a method of responding to overload in a real time system such as a telecommunication system, in where overload is measured through the use of a control parameter and the overload indication is reduced to one of a plurality of levels (i.e., degrees), the level corresponding to a longer term (i.e., second degree) more serious overload are based on control measurements over a longer period of time than the less serious short term (i.e., first degree) overload, and therefore the actions taken for relieving overloading are distinguished by the level of overload). Therefore, it would have been obvious to

a person having ordinary skill in the art at the time of the invention, to modify the combination to include detecting a first degree overload as a function of a measured parameter exceeding the threshold for a period of time and detecting a second degree overload as a function of a measured parameter exceeding the threshold for a second period of time longer than the first period of time, as suggested by Gehi, since such a modification would allow the system to distinguish the severity of the overload condition and the control actions to be performed according to the level of overload in the system.

Regarding claim 23, Choi discloses a base station configured to support communications with a plurality of communication devices, the communications placing a load on the base station (col. 1, lines 22-25, 38-43; col. 2, lines 1-5; the base transceiver station BTS include means to transmit/receive information to/from mobile stations (i.e., transmitter/receiver), thus placing a load in the BTS), the base station comprising: a receiver; and

a processor (col. 3, lines 20-36; i.e., overload control device) configured to monitor a plurality of parameters each relating to the load on the base station (Fig. 2; col. 3, lines 20-36; col. 3, line 59-col. 4, lines 1-21; the overload control device that monitors a base control processor (BCP) activity, BTS call resource occupancy rate, central control processor (CCP) activity, etc. (i.e., plurality of parameters/ value Y1)), and to detect an overload as a result of one of the parameters crossing a threshold (Fig. 3; col. 3, lines 59-64; col. 4, lines 15-67; the overload detect unit stores different threshold points that indicate different overload types, and when the overload control process is started compares the detected parameters (i.e., value Y1) with the thresholds and detects the overload when the parameters exceeds the threshold), and to reduce the load on the base station using a plurality of control mechanisms based on a plurality

of types of the overload on the base station; and wherein each type is associated with at least one of the parameters (col. 4, line 22-col.5, lines 1-12; the overload process unit can detect the overload in the handoff request call point, at the incoming or out-going call request points (i.e., overload types), in response when the process unit detects the overload in the handoff request call it rejects the allocation for all call requests, if the overload process unit detects an incoming and outgoing call overload, the incoming or out-going call is rejected, etc. (i.e., plurality of control mechanisms to reduce load)).

But, Choi does not particularly disclose using a control mechanism to reduce the load on the base station based on a degree of the overload.

However, Lee teaches using a control mechanism to reduce the load on the base station based on a degree of the overload (Lee teaches an overload control method that includes judging whether an access network (i.e., base station) is overloaded and restricting an originating call and a termination call (i.e., plurality of control mechanisms) according to a degree of the overload so that the overload control method can effectively cope with the overload situation (see abstract; p.0033-0036). The overload control processes periodically checks whether the access network is overloaded, and when is indeed overloaded, a call (i.e., terminating call or originating call) is discriminately restricted according to a degree of overload (p.0051-0056; Fig. 6)). Therefore, it would have been obvious to a person having ordinary skill in the at the time of the invention, to modify Choi to include using a control mechanism to reduce the load on the base station based on a degree of the overload, as suggested by Lee, since such a modification would allow the system to discriminately perform an overload control according to a degree of the overload so

that the overload control method can effectively cope with the overload situation, and to effectively manage the resources at the base station (abstract; p.0033-0034 and p.0083).

But, the combination of Choi and Lee does not particularly disclose wherein one of the parameters is a function of receiver stability at the base station and wherein the overload is detected as a result of a receiver stability estimate exceeding a threshold.

However, Gandhi teaches a base station monitoring the receiver stability and wherein overload is detected as a result of the receiver stability estimate exceeding a threshold (col. 3, line 22-col. 5, lines 1-13; the base station monitors a first performance indicators that includes rise from interference rise over background thermal noise (i.e., receiver stability parameter) that is comparing with a blocking threshold that represents a control overload benchmark and if the first performance indicator exceeds the blocking threshold, the base station rejects new call arrivals because the system is overloaded). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the combination to include wherein one of the parameters comprises receiver stability at the base station and wherein the overload is detected as a result of a receiver stability estimate exceeding a threshold, as suggested by Gandhi, since such a modification would allow the base station to facilitate meeting a desired level of signal quality or statistical reliability over a defined coverage area for the reverse link of currently active users.

But, the combination of Choi, Lee, and Gandhi does not particularly disclose detecting a first degree overload as a function of a measured parameter exceeding the threshold for a period of time and detecting a second degree overload as a function of a measured parameter exceeding the threshold for a second period of time longer than the first period of time.

However, Gehi teaches detecting a first degree overload as a function of a measured parameter exceeding the threshold for a period of time and detecting a second degree overload as a function of a measured parameter exceeding the threshold for a second period of time longer than the first period of time. (abstract; col. 2, lines 5-36; Gehi teaches a method of responding to overload in a real time system such as a telecommunication system, in where overload is measured through the use of a control parameter and the overload indication is reduced to one of a plurality of levels (i.e., degrees), the level corresponding to a longer term (i.e., second degree) more serious overload are based on control measurements over a longer period of time than the less serious short term (i.e., first degree) overload, and therefore the actions taken for relieving overloading are distinguished by the level of overload). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to modify the combination to include detecting a first degree overload as a function of a measured parameter exceeding the threshold for a period of time and detecting a second degree overload as a function of a measured parameter exceeding the threshold for a second period of time longer than the first period of time, as suggested by Gehi, since such a modification would allow the system to distinguish the severity of the overload condition and the control actions to be performed according to the level of overload in the system.

8. **Claim 32** is rejected under 35 U.S.C. 103(a) as being unpatentable over CHOI et al. in views of LEE, and ANDERSSON (US 5,697,054).

Regarding claim 32, Choi discloses a base station configured to support communications with a plurality of communication devices, the communications placing a load on the base station (col. 1, lines 22-25, 38-43; col. 2, lines 1-5; the base transceiver station BTS include

means to transmit/receive information to/from mobile stations (i.e., transmitter/receiver), thus placing a load in the BTS), the base station comprising: a receiver; and

a processor (col. 3, lines 20-36; i.e., overload control device) configured to monitor a plurality of parameters each relating to the load on the base station (Fig. 2; col. 3, lines 20-36; col. 3, line 59-col. 4, lines 1-21; the overload control device that monitors a base control processor (BCP) activity, BTS call resource occupancy rate, central control processor (CCP) activity, etc. (i.e., plurality of parameters/ value Y1)), and to detect an overload as a result of one of the parameters crossing a threshold (Fig. 3; col. 3, lines 59-64; col. 4, lines 15-67; the overload detect unit stores different threshold points that indicate different overload types, and when the overload control process is started compares the detected parameters (i.e., value Y1) with the thresholds and detects the overload when the parameters exceeds the threshold), and to reduce the load on the base station using a plurality of control mechanisms based on a plurality of types of the overload on the base station; and wherein each type is associated with at least one of the parameters (col. 4, line 22-col.5, lines 1-12; the overload process unit can detect the overload in the handoff request call point, at the incoming or out-going call request points (i.e., overload types), in response when the process unit detects the overload in the handoff request call it rejects the allocation for all call requests, if the overload process unit detects an incoming and outgoing call overload, the incoming or out-going call is rejected, etc. (i.e., plurality of control mechanisms to reduce load)), wherein one of the parameters is function of loading on a processor (col. 3, lines 20-36; col. 4, lines 15-20; the systems periodically monitors the base control processor BCP activity and the central control processor CCP activity ratio).

But, Choi does not particularly disclose using a control mechanism to reduce the load on the base station based on a degree of the overload.

However, Lee teaches using a control mechanism to reduce the load on the base station based on a degree of the overload (Lee teaches an overload control method that includes judging whether an access network (i.e., base station) is overloaded and restricting an originating call and a termination call (i.e., plurality of control mechanisms) according to a degree of the overload so that the overload control method can effectively cope with the overload situation (see abstract; p.0033-0036). The overload control processes periodically checks whether the access network is overloaded, and when is indeed overloaded, a call (i.e., terminating call or originating call) is discriminately restricted according to a degree of overload (p.0051-0056; Fig. 6)). Therefore, it would have been obvious to a person having ordinary skill in the at the time of the invention, to modify Choi to include using a control mechanism to reduce the load on the base station based on a degree of the overload, as suggested by Lee, since such a modification would allow the system to discriminately perform an overload control according to a degree of the overload so that the overload control method can effectively cope with the overload situation, and to effectively manage the resources at the base station (abstract; p.0033-0034 and p.0083).

But, the combination of Choi and Lee does not particularly teach the base station including a second processor. However, a base station comprising a second processor is well known in the art and Andersson is evidence of the fact. Andersson teaches a base station system comprising a plurality of processors as shown in figure 1 (i.e., RPD1, RPD2, …) that monitors the load in each of the processors and shares the load between processors for eliminating the risk of overload in the processors (abstract; col.1, lines 35-60). Therefore, it would have been obvious

to a person having ordinary skill in the art at the time of the invention, to modify the combination to include a second processor in the base station, as suggested by Andersson, since such a modification allows the base station to share the load of communications between a plurality of processors to maintain stability.

9. **Claim 34** is rejected under 35 U.S.C. 103(a) as being unpatentable over CHOI et al. in views of LEE, and ANDERSSON, and JANG et al. (US 2002/0173316).

Regarding claim 34, Choi discloses a base station configured to support communications with a plurality of communication devices, the communications placing a load on the base station (col. 1, lines 22-25, 38-43; col. 2, lines 1-5; the base transceiver station BTS include means to transmit/receive information to/from mobile stations (i.e., transmitter/receiver), thus placing a load in the BTS), the base station comprising: a receiver; and

a processor (col. 3, lines 20-36; i.e., overload control device) configured to monitor a plurality of parameters each relating to the load on the base station (Fig. 2; col. 3, lines 20-36; col. 3, line 59-col. 4, lines 1-21; the overload control device that monitors a base control processor (BCP) activity, BTS call resource occupancy rate, central control processor (CCP) activity, etc. (i.e., plurality of parameters/ value Y1)), and to detect an overload as a result of one of the parameters crossing a threshold (Fig. 3; col. 3, lines 59-64; col. 4, lines 15-67; the overload detect unit stores different threshold points that indicate different overload types, and when the overload control process is started compares the detected parameters (i.e., value Y1) with the thresholds and detects the overload when the parameters exceeds the threshold), and to reduce the load on the base station using a plurality of control mechanisms based on a plurality of types of the overload on the base station; and wherein each type is associated with at least one

of the parameters (col. 4, line 22-col.5, lines 1-12; the overload process unit can detect the overload in the handoff request call point, at the incoming or out-going call request points (i.e., overload types), in response when the process unit detects the overload in the handoff request call it rejects the allocation for all call requests, if the overload process unit detects an incoming and outgoing call overload, the incoming or out-going call is rejected, etc. (i.e., plurality of control mechanisms to reduce load)), wherein one of the parameters is function of loading on a processor (col. 3, lines 20-36; col. 4, lines 15-20; the systems periodically monitors the base control processor BCP activity and the central control processor CCP activity ratio).

But, Choi does not particularly disclose using a control mechanism to reduce the load on the base station based on a degree of the overload.

However, Lee teaches using a control mechanism to reduce the load on the base station based on a degree of the overload (Lee teaches an overload control method that includes judging whether an access network (i.e., base station) is overloaded and restricting an originating call and a termination call (i.e., plurality of control mechanisms) according to a degree of the overload so that the overload control method can effectively cope with the overload situation (see abstract; p.0033-0036). The overload control processes periodically checks whether the access network is overloaded, and when is indeed overloaded, a call (i.e., terminating call or originating call) is discriminately restricted according to a degree of overload (p.0051-0056; Fig. 6)). Therefore, it would have been obvious to a person having ordinary skill in the at the time of the invention, to modify Choi to include using a control mechanism to reduce the load on the base station based on a degree of the overload, as suggested by Lee, since such a modification would allow the system to discriminately perform an overload control according to a degree of the overload so

that the overload control method can effectively cope with the overload situation, and to effectively manage the resources at the base station (abstract; p.0033-0034 and p.0083).

But, the combination of Choi and Lee does not particularly teach the base station including a second processor. However, a base station comprising a second processor is well known in the art and Andersson is evidence of the fact. Andersson teaches a base station system comprising a plurality of processors as shown in figure 1 (i.e., RPD1, RPD2, …) that monitors the load in each of the processors and shares the load between processors for eliminating the risk of overload in the processors (abstract; col.1, lines 35-60). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to modify the combination to include a second processor in the base station, as suggested by Andersson, since such a modification allows the base station to share the load of communications between a plurality of processors to maintain stability.

Yet, the combination of Choi, Lee, and Andersson does not expressly disclose wherein the control mechanism used to control the load is also selected based on the type of application running in the base station.

However, this parameter is well known in the art to influence the decision of controlling the load in a communication system as taught by Jang. Jang teaches a method and system for limiting or controlling access in communication networks during overload conditions. Once the network (i.e., BSC or BS) is aware of the overload condition, it begins to analyze the condition to determine the proper course of action, and when it determines that access control should implemented, it then decides which type of application/call (i.e., voice, data, facsimile, etc.) to control. For example, if the overload condition is light to moderate, a decision might be to

control or limit access to all data services, but allow voice services to continue, in another situation, the network may limit access to all digital facsimiles services (p.0024-0026, and 0029-0030). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to modify the combination to include the features of selecting a load control mechanism based on the type of application, as suggested by Jang, since such a modification would provide the wireless communication network to limit or control different types of application in order to reduce the overload conditions.

10. **Claim 37** is rejected under 35 U.S.C. 103(a) as being unpatentable over CHOI et al. in views of LEE, ANDERSSON, GANDHI, and LAAKSO (US 2003/0003921 A1).

Regarding claim 37, Choi discloses a base station configured to support communications with a plurality of communication devices, the communications placing a load on the base station (col. 1, lines 22-25, 38-43; col. 2, lines 1-5; the base transceiver station BTS include means to transmit/receive information to/from mobile stations (i.e., transmitter/receiver), thus placing a load in the BTS), the base station comprising: a receiver; and

a processor (col. 3, lines 20-36; i.e., overload control device) configured to monitor a plurality of parameters each relating to the load on the base station (Fig. 2; col. 3, lines 20-36; col. 3, line 59-col. 4, lines 1-21; the overload control device that monitors a base control processor (BCP) activity, BTS call resource occupancy rate, central control processor (CCP) activity, etc. (i.e., plurality of parameters/ value Y1)), and to detect an overload as a result of one of the parameters crossing a threshold (Fig. 3; col. 3, lines 59-64; col. 4, lines 15-67; the overload detect unit stores different threshold points that indicate different overload types, and when the overload control process is started compares the detected parameters (i.e., value Y1)

with the thresholds and detects the overload when the parameters exceeds the threshold), and to reduce the load on the base station using a plurality of control mechanisms based on a plurality of types of the overload on the base station; and wherein each type is associated with at least one of the parameters (col. 4, line 22-col.5, lines 1-12; the overload process unit can detect the overload in the handoff request call point, at the incoming or out-going call request points (i.e., overload types), in response when the process unit detects the overload in the handoff request call it rejects the allocation for all call requests, if the overload process unit detects an incoming and outgoing call overload, the incoming or out-going call is rejected, etc. (i.e., plurality of control mechanisms to reduce load)), wherein one of the parameters is function of loading on a processor (col. 3, lines 20-36; col. 4, lines 15-20; the systems periodically monitors the base control processor BCP activity and the central control processor CCP activity ratio), and

a receiver, a transmitter (col. 1, lines 22-25, 38-43; col. 2, lines 1-5; the base transceiver station BTS include means to transmit/receive information to/from mobile stations (i.e., transmitter/receiver)), wherein one of the parameters is a function of loading on a processor (col. 3, lines 20-36; col. 4, lines 15-20; the system periodically monitors the base control processor BCP activity and the central control processor CCP activity ratio (i.e., processor)).

But, Choi does not particularly disclose using a control mechanism to reduce the load on the base station based on a degree of the overload.

However, Lee teaches using a control mechanism to reduce the load on the base station based on a degree of the overload (Lee teaches an overload control method that includes judging whether an access network (i.e., base station) is overloaded and restricting an originating call and a termination call (i.e., plurality of control mechanisms) according to a degree of the overload so

that the overload control method can effectively cope with the overload situation (see abstract; p.0033-0036). The overload control processes periodically checks whether the access network is overloaded, and when is indeed overloaded, a call (i.e., terminating call or originating call) is discriminately restricted according to a degree of overload (p.0051-0056; Fig. 6)). Therefore, it would have been obvious to a person having ordinary skill in the at the time of the invention, to modify Choi to include using a control mechanism to reduce the load on the base station based on a degree of the overload, as suggested by Lee, since such a modification would allow the system to discriminately perform an overload control according to a degree of the overload so that the overload control method can effectively cope with the overload situation, and to effectively manage the resources at the base station (abstract; p.0033-0034 and p.0083).

But, the combination of Choi and Lee does not particularly teach the base station including a second processor. However, a base station comprising a second processor is well known in the art and Andersson is evidence of the fact. Andersson teaches a base station system comprising a plurality of processors as shown in figure 1 (i.e., RPD1, RPD2, …) that monitors the load in each of the processors and shares the load between processors for eliminating the risk of overload in the processors (abstract; col.1, lines 35-60). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to modify the combination to include a second processor in the base station, as suggested by Andersson, since such a modification allows the base station to share the load of communications between a plurality of processors to maintain stability.

In, addition the combination of Choi, Lee, and Andersson does not particularly disclose wherein one of the parameters is a function of receiver stability, and a second one of the parameters is a function of transmission power requirements.

However, Gandhi teaches a base station monitoring the receiver stability (col. 3, line 22-col. 5, lines 1-13; the base station monitors a first performance indicators that includes rise from interference rise over background thermal noise (i.e., receiver stability parameter) that is comparing with a blocking threshold that represents a control overload benchmark and if the first performance indicator exceeds the blocking threshold, the base station rejects new call arrivals because the system is overloaded). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the combination to include wherein one of the parameters comprises receiver stability at the base station, as suggested by Gandhi, since such a modification would allow the base station to facilitate meeting a desired level of signal quality or statistical reliability over a defined coverage area for the reverse link of currently active users.

In addition, Laakso teaches a base station monitoring transmission power requirements for a transmitter (abstract, lines 1-11; paragraphs [0071],[0074]). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention, to modify the combination to include the features of monitoring the transmission power requirements for a base station transmitter, as suggested by Laakso, since such a modification would allow the base station to estimate and control the state of congestion of a communication system due to wireless communication devices.

11. **Claim 38** is rejected under 35 U.S.C. 103(a) as being unpatentable over CHOI in views of LEE, GANDHI, ANDERSSON, LAAKSO, and PADOVANI (US 6,442,398).

Regarding claim 38, the combination of Gandhi, Andersson, Lee, Lin, and Laakso disclose the base station of claim 37, but the combination does not particularly disclose monitoring a fourth parameter comprising a function of the number of communication devices in communication with the base station.

However, Padovani teaches that a simple means for determining reverse link loading is to simply count the number of active users in the base station (col.4, lines 32-34). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention, to modify the combination to include the features of monitoring a fourth parameter comprising a number of the communication devices in communication with the base station, as suggested by Padovani, since such a modification would provide the base station with another parameters for determining a reverse link loading.

12. **Claim 10** is rejected under 35 U.S.C. 103(a) as being unpatentable over CHOI et al. in views of LEE and PADOVANI.

Regarding claim 10, the combination of Choi and Lee disclose the apparatus of claim 1, but the combination does not particularly disclose wherein one of the parameters comprises a number of the communication devices in communication with the base station. However, Padovani teaches that a simple means for determining reverse link loading is to simply count the number of active users in the base station (col.4, lines 32-34). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention, to modify the

combination to include a parameter comprising of monitoring a number of the communication devices in communication with the base station, as suggested by Padovani, since such a modification would provide the base station with another parameters for determining a reverse link loading.

13. **Claims 2, 3, 22, and 45-46** are rejected under 35 U.S.C. 103(a) as being unpatentable over CHOI et al. in views of LEE, and GANDHI et al.

Regarding claims 2-3; the combination of Choi and Lee disclose the apparatus of claim 1, but the combination does not particularly disclose wherein one of the parameters comprises receiver stability at the base station, and the overload is detected as a result of a receiver stability estimate exceeding a threshold, wherein the receiver stability estimate comprises a rise over thermal.

However, Gandhi teaches a base station monitoring the receiver stability and wherein overload is detected as a result of the receiver stability estimate exceeding a threshold (col. 3, line 22-col. 5, lines 1-13; the base station monitors a first performance indicators that includes rise from interference rise over background thermal noise (i.e., receiver stability parameter) that is comparing with a blocking threshold that represents a control overload benchmark and if the first performance indicator exceeds the blocking threshold, the base station rejects new call arrivals because the system is overloaded). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the combination to include wherein one of the parameters comprises receiver stability at the base station and wherein the overload is detected as a result of a receiver stability estimate exceeding a threshold, and wherein the receiver stability estimate comprises rise over thermal, as suggested by Gandhi, since such a

modification would allow the base station to facilitate meeting a desired level of signal quality or statistical reliability over a defined coverage area for the reverse link of currently active users.

Regarding claim 22; the combination of Choi and Lee disclose the base station of claim 21, further comprising a receiver, but the combination does not particularly disclose wherein one of the parameters comprises receiver stability at the base station, and the overload is detected as a result of a receiver stability estimate exceeding a threshold for a period of time.

However, Gandhi teaches a base station monitoring the receiver stability and wherein overload is detected as a result of the receiver stability estimate exceeding a threshold (col. 3, line 22-col. 5, lines 1-13; the base station monitors a first performance indicators that includes rise from interference rise over background thermal noise (i.e., receiver stability parameter) that is comparing with a blocking threshold that represents a control overload benchmark and if the first performance indicator exceeds the blocking threshold, the base station rejects new call arrivals because the system is overloaded). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the combination to include wherein one of the parameters comprises receiver stability at the base station and wherein the overload is detected as a result of a receiver stability estimate exceeding a threshold, as suggested by Gandhi, since such a modification would allow the base station to facilitate meeting a desired level of signal quality or statistical reliability over a defined coverage area for the reverse link of currently active users.

Regarding claims 45 and 46, the combination of Choi and Lee disclose the apparatus (and base station) of claims 1 and 21, but the combination does not particularly disclose wherein

the plurality of types comprises a type indicating high rise-over thermal condition or a type indicating lack of power.

However, Gandhi teaches a type of overload that indicates a high rise-over thermal condition (col. 3, line 22-col. 5, lines 1-13; the base station monitors a first performance indicators that includes rise from interference rise over background thermal noise (rise over thermal) that is compared with a blocking threshold that represents a control overload benchmark and if the first performance indicator exceeds the blocking threshold, exceeding the blocking threshold indicates that the system is overloaded and increased interference). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the combination to include wherein a type of overload that indicates a high rise-over thermal condition, as suggested by Gandhi, since such a modification would allow the base station to facilitate meeting a desired level of signal quality for active users.

14. **Claims 4, 5, 24, and 25** are rejected under 35 U.S.C. 103(a) as being unpatentable over CHOI et al. in views of LEE, GANDHI et al. and LEE et al. (US 2003/0125068 A1), hereinafter LEE ‘068.

Regarding claim 4, the combination of Choi, Lee, and Gandhi disclose the apparatus of claim 3, but the combination does not particularly disclose further comprising means for generating power control commands for each of the communication devices, and adjusting the threshold as a function of the power control commands. However, Lee ‘068 discloses a method of performing power control in a mobile communication system, wherein the base station generates power control commands based on a power control threshold value for a first terminal and adjusted according to a communication environment (p.0012-0020; p.0029-0037).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention, to modify the combination to incorporate means for generating power control commands for each of the communication devices and adjust a threshold as a function of the power control commands, as suggested by Lee ‘068, in order to reduce signal interference in the system.

Regarding claim 5, the combination of Choi, Lee, Gandhi, and Lee ‘068 disclose the apparatus of claim 4, in addition Lee ‘068 discloses further comprising means for monitoring the communications from each of the communication devices to detect errors, and wherein the adjustment of the threshold is further a function of the detected errors (p.0038-0039).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention, to modify the combination to incorporate means for monitoring the communication from the communication devices to detect errors and adjust the threshold as a

function of the detected errors, as suggested by Lee ‘068, in order to decrease for example the frame errors of voice data.

Regarding claim 24, the combination of Choi, Lee, and Gandhi disclose the base station of claim 22, but the combination does not particularly disclose wherein the processor is further configured to generate power control commands for each of the communication devices, and adjust the threshold as a function of the power control commands. However, Lee ‘068 discloses a method of performing power control in a mobile communication system, wherein the base station generates power control commands based on a power control threshold value for a first terminal and adjusted according to a communication environment (p.0012-0020; p.0029-0037).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention, to modify the combination to configure the processor to generate power control commands and adjust a threshold as a function of the power control command, as suggested by Lee ‘068, in order to reduce signal interference in the system and avoid degradation of the signal quality.

Regarding claim 25, the combination of Choi, Lee, Gandhi, and Lee ‘068 disclose the base station of claim 24, in addition Lee ‘068 discloses wherein the processor is further configured to monitor communications from the communication devices to detect errors, and wherein the adjustment of the threshold by the processor is further a function of the detected errors (p.0038-0039). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention, to modify the combination to include the features of monitoring the communication from the communication devices to detect errors and adjust the threshold as a

function of the detected errors, as suggested by Lee '068, in order to decrease for example the frame errors of voice data.

15. **Claims 7-9 and 26-28** are rejected under 35 U.S.C. 103(a) as being unpatentable over CHOI et al., in views of LEE, and LAAKSO.

Regarding claim 7, the combination of Choi and Lee disclose the apparatus of claim 1, but the combination does not particularly disclose wherein one of the parameters comprises transmission power requirements for a base station transmitter, the transmission power requirements being derived from feedback from the communication devices.

However, Laakso teaches a method for traffic load control in a telecommunication network comprising the steps of setting a first reference load value for the load of a respective cell (abstract, lines 1-11); the method measures the parameter PrxTotal which is the total received power in the uplink measured on cell basis (Page 3, Table), and establishes an overload condition if the PrxTotal exceeds the overload threshold PrxThreshold (p.0071; p.0074). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention, to modify the combination to incorporate the feature of monitoring transmission power requirements for a base station transmitter, as suggested by Laakso, since such a modification would allow the base station to estimate and control the state of congestion of a communication system due to wireless communication devices.

Regarding claim 8, the combination of Choi, Lee, and Laakso disclose the apparatus of claim 7, in addition Laakso discloses wherein the transmission power requirements comprises transmission power requirements for a plurality of reverse power control (RPC) channels, each of the RPC channels being assigned to one of the communication devices (Page 3, Table; the

method measures the PrxTotal which is the total received power in the uplink, i.e. reverse channels). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention, to modify the combination to include the features of wherein the transmission power requirements comprises transmission power requirements for a plurality of reverse power control channels, as suggested by Laakso, since such a modification would allow the base station to ensure the stability of the network.

Regarding claim 9, the combination of Choi, Lee, and Laakso disclose the apparatus of claim 7, in addition Laakso discloses wherein the overload is detected as a result of the transmission power requirements exceeding a maximum transmission power capability of the base station transmitter (p.0123, lines 1-9). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention, to modify the combination to include the features of detecting an overload condition as a result of the transmission power requirements exceeding a maximum transmission power capability, as suggested by Laakso, because it is well known in the art that when the transmission power of a base station is determined to be too much (i.e., exceeding a maximum transmission capability), the system becomes unstable, indicating an overload condition.

Regarding claim 26, the combination of Choi and Lee disclose the base station of claim 21, in addition Choi discloses further comprising a transmitter (inherent in a base station BTS), but the combination of Choi and Lee does not particularly disclose wherein one of the monitored parameters is a function of the transmission power requirements for the transmitter, the processor being further configured to derive transmission power requirements from feedback from the communication devices.

However, Laakso teaches a method for traffic load control in a telecommunication network comprising the steps of setting a first reference load value for the load of a respective cell (abstract, lines 1-11); the method measures the parameter PrxTotal which is the total received power in the uplink measured on cell basis (Page 3, Table), and establishes an overload condition if the PrxTotal exceeds the overload threshold PrxThreshold (p.0071; p.0074). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention, to modify the combination to include the features of monitoring transmission power requirements for a base station transmitter, as suggested by Laakso, since such a modification would allow the base station to estimate and control the state of congestion of a communication system due to wireless communication devices.

Regarding claim 27, the combination of Choi, Lee, and Laakso disclose the base station of claim 26, in addition Laakso discloses wherein the transmission power requirements comprise transmission power requirements for a plurality of reverse power control (RPC) channels, each of the RPC channels being assigned to one of the communication devices (Page 3, Table; the method measures the PrxTotal which is the total received power in the uplink, i.e. reverse channels). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention, to modify the combination to include the features of wherein the transmission power requirements comprises transmission power requirements for a plurality of reverse power control channels, as suggested by Laakso, since such a modification would allow the base station to ensure the stability of the network.

Regarding claim 28, the combination of Choi, Lee, and Laakso disclose the base station of claim 26, in addition Laakso discloses wherein the overload is detected as a result of the

transmission power requirements exceeding a maximum transmission power capability of the base station transmitter (p.0123, lines 1-9). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention, to modify the combination to include the feature of detecting an overload condition as a result of the transmission power requirements exceeding a maximum transmission power capability, as suggested by Laakson, because when the transmission power is determined to be too much (i.e., exceeding a maximum transmission capability), the system becomes unstable, indicating an overload condition.

16. **Claims 12 and 30** are rejected under 35 U.S.C. 103(a) as being unpatentable over CHOI et al. in views of LEE, and VOLFTSUN et al. (US 6,707,792 B1).

Regarding claim 12, the combination of Choi and Lee disclose the apparatus of claim 1, but the combination fails to particularly disclose comprising means for detecting a second degree of overload as a result of said one of the parameters crossing a second threshold.

However, Volftsun teaches a method and apparatus for reducing overload conditions of a node of a communication system, that establishes pairs of overload thresholds values and each overload threshold correspond to the current saturation level (abstract). The pair of thresholds corresponds to an upper and a lower overload level values and correspond to saturation conditions in the node (col.2, line 34 – col. 3, lines 1-7). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention, to modify the combination to incorporate means for detecting a second degree of overload level as a result of one of the parameters crossing a second threshold, as suggested by Volftsun, because a second threshold may correspond to an upper overload threshold value that indicates a saturation condition in the

base station which is an indication of overload that is higher than the overload resulting from crossing a lower overload threshold value.

Regarding claim 30, the combination of Choi and Lee disclose the base station of claim 21, but the combination fails to particularly disclose wherein the processor is further configured to detect a second degree overload as a result of the one of the parameters crossing a second threshold.

However, Volftsun teaches a method and apparatus for reducing overload conditions of a node of a communication system, it establishes pairs of overload thresholds values and each overload threshold correspond to the current saturation level (abstract). The pair of thresholds corresponds to an upper and a lower overload level values and correspond to saturation conditions in the node (col.2, line 34 – col. 3, lines 1-7). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention, to modify the combination to include the features of detecting a second degree of overload level as a result of one of the parameters crossing a second threshold, as suggested by Volftsun, because a second threshold may correspond to an upper overload threshold value that indicates a saturation condition in the base station which is an indication of overload that is higher than the overload resulting from crossing a lower overload threshold value.

17. **Claims 15 and 35** are rejected under 35 U.S.C. 103(a) as being unpatentable over CHOI et al., in views of LEE, GANDHI et al., and LAAKSO.

Regarding claims 15 and 35, the combination of Choi and Lee disclose the apparatus (and base station) of claims 1 and 21, in addition Choi discloses wherein one of the parameters comprises loading on processing resources used for communication with the communication

devices (col. 3, lines 20-36; col. 4, lines 15-20; the systems periodically monitors the BTS call occupancy rate).

But, the combination of Choi and Lee does not particularly disclose wherein a second one of the parameters includes a receiver stability at the base station, wherein a third one of the parameters comprises base station transmission power requirements derived from feedback from the communication devices.

However, Gandhi teaches a base station monitoring the receiver stability (col. 3, line 22-col. 5, lines 1-13; the base station monitors a first performance indicators that includes rise from interference rise over background thermal noise (i.e., receiver stability parameter) that is comparing with a blocking threshold that represents a control overload benchmark and if the first performance indicator exceeds the blocking threshold, the base station rejects new call arrivals because the system is overloaded). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the combination to include wherein one of the parameters comprises receiver stability at the base station, as suggested by Gandhi, since such a modification would allow the base station to facilitate meeting a desired level of signal quality or statistical reliability over a defined coverage area for the reverse link of currently active users.

And, Laakso teaches a base station monitoring transmission power requirements derived from feedback from the communication devices (abstract, lines 1-11; paragraphs [0071] and [0074]). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention, to modify the combination to include the features of monitoring transmission power requirements for a base station transmitter, as suggested by Laakso, since such a

modification would allow the base station to estimate and control the state of congestion of a communication system due to wireless communication devices.

18. **Claims 16 and 36** are rejected under 35 U.S.C. 103(a) as being unpatentable over CHOI et al. in views of LEE, GANDHI et al., LAAKSO, and PADOVANI.

Regarding claims 16 and 36, the combination of Choi, Lee, Gandhi, and Laakso disclose the apparatus (and base station) of claims 15 and 35, but the combination does not particularly disclose wherein a fourth of the parameters comprises a number of the communication devices in communication with the base station. However, Padovani teaches that a simple means for determining reverse link loading is to simply count the number of active users in the base station (col.4, lines 32-34). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention, to modify the combination to include a parameter comprising of monitoring a number of the communication devices in communication with the base station, as suggested by Padovani, since such a modification would provide the base station with another parameter for determining a reverse link loading.

19. **Claim 18** is rejected under 35 U.S.C. 103(a) as being unpatentable over CHOI et al. in views of LEE and BENDER.

Regarding claim 18, the combination of Choi and Lee disclose the apparatus as in claim 1, but the combination does not particularly disclose the control mechanisms comprising: means for determining idle users; and means for bumping service to idle users.

However, this overload control mechanism is well known in the art and Bender is evidence of the fact. Bender teaches a method for supervising connections with wireless access terminals and releasing the access terminals when they become idle for a predetermined period

of time (p.0036, lines 1-11). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to modify the combination of Choi and Lee to include the overload control mechanism comprising means for determining idle users and means for bumping service to idle users, as suggested by Bender, since such a modification will allow the system to maximize the RF resources for use by other users.

20. **Claim 20** is rejected under 35 U.S.C. 103(a) as being unpatentable over CHOI et al. in views of LEE, BENDER, KIM et al., and KATOH et al. (US 5,949,757).

Regarding claim 20, the combination of Choi, Lee, Bender, and Kim disclose the apparatus as in claim 19, but the combination fails to particularly disclose means for determining a first group of users having transferred a first amount of data; and means for bumping service to the first group of users. However, Katoh teaches a method for monitoring packet flow in a communication system, the system includes a connection group monitor means that monitors the flows of packets transferred over the connection group and checks whether the flow of packets (i.e., amount of data) exceeds a threshold and if the flow exceeds the threshold the monitor means discard the packets (i.e., bump service to the group) so congestion does not occur (col.2, lines 24-58). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to modify the combination to include the control mechanism comprising determining a first group having transferred a first amount of data and bumping service to the first group, as suggested by Katoh, in order for the system to efficiently regulate the amount of data transmitted by a group of users so congestion does not occur.

21. **Claims 41 and 42** are rejected under 35 U.S.C. 103(a) as being unpatentable over CHOI et al. in views of LEE and LIN et al. (US 5,917,806).

Regarding claims 41 and 42, the combination of Choi and Lee disclose the apparatus (and base station) of claims 1 and 21, but the combination does not particularly disclose means for detecting an early time period, wherein the early time period occurs before the overload is detected; and wherein the plurality of control mechanisms are also implemented during the early time period.

However, Lin teaches means for detecting an early time period, wherein the early time period occurs before the overload is detected (i.e., early warning of impending congestion) and implementing a plurality of control mechanisms during the early time period (Abstract; col. 1, lines 39-56; col. 3, lines 55-66; col. 4, lines 42-59; col. 5, lines 1-45; Lin teaches a radio communication system comprising a processing system (Fig. 2) that is programmed to detect an early warning of impending congestion (i.e., early time period before overload is detected) and takes action to relieve the impending congestion by doing at least one of (a) increasing output resources and (b) decreasing traffic rates (i.e., plurality of control mechanisms)). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to modify the combination to include means for detecting an early time period that occurs before the overload is detected (i.e., early warning of impending congestion) and implementing a plurality of control mechanisms to reduce the load during the early time period, as suggested by Lin, since such a modification would provide the advantage of attacking potential congestion (i.e., overload) in a communication system as early as possible so that the system does not become unstable very often (col. 4, lines 42-59).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marisol Figueroa whose telephone number is (571) 272-7840. The examiner can normally be reached on Monday Thru Friday 8:30 a.m. - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vincent P. Harper can be reached on (571) 272-7605. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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